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C
cont.*
B14
cancel
108. (Once Amended) The dosage form of claim 2 wherein, following introduction of said dosage form to a use environment, at least 95 wt% of said drug is released to said use environment within 24 hours.

Cancel claims 109, 110, 111, 112, 113, 114, 115, 116, and 117.

B15
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C*
118. (Once Amended) The dosage form of claim 2 wherein said low solubility drug is in the form of an amorphous dispersion.

Cancel claim 123.

Cancel claims 125, 126, 127, 128, and 129.

B16
130. (Once Amended) The dosage form of claim 2 wherein said drug-containing composition further includes a concentration-enhancing polymer.

REMARKS

As a preliminary matter, attention is directed to the Rule 132 Declaration of Scott B. McCray included herewith.

The above amendments have been made to cancel non-elected subject matter. Sheets captioned "VERSION MARKED UP TO SHOW CHANGES MADE" are appended hereto to show the exact nature of the emendations.

After amendment, claims 2, 7-9, 12-32, 44-45, 49-51, 56-81, 88-97, 101, 103-108, 118-122, 124, and 130-131 are in the application.

Claims 1, 3-6, 10-11, 33-43, 46-48, 52-55, 82-87, 98-100, 102, 109-117, 123, and 125-129 have been canceled without waiver or prejudice to Applicants' right to file one or more divisional applications directed to such non-elected subject matter.

It is noted that in the original Restriction Requirement, claims 52 and 53 were included as part of the invention of Group II. On review of these claims, it is believed that they are actually directed to non-elected subject matter, and hence they have been canceled.

It is further noted that in the instant Office Action, claims 58-62 were indicated as having been withdrawn from consideration. It is believed these claims should remain in the application even though they are not directed to the elected species and that, consistent with election-of-species practice, they should be included as among the claims ultimately allowed should the Examiner determine that Applicants' other claims constitute patentable subject matter following the Examiner's search directed to the elected species. If the

Examiner disagrees, it is requested that he telephone the undersigned (860-441-4903) for a discussion on this point.

Claims 95-97 stand rejected under 35 USC § 112, second paragraph as being indefinite, in that claim 95 recites a coating that "is porous with a dry-state density of less than 0.9 times that of the same coating material in nonporous form." The application at page 40, lines 1-17 defines what is meant by porous and nonporous:

Preferred coatings are generally porous even in the dry state (prior to delivery to the aqueous use environment). By "porous" is meant that the coating has a dry-state density less than the density of the nonporous coating material. By "nonporous coating material" is meant a coating material formed by using a coating solution containing no non-solvent, or the minimum amount of non-solvent required to produce a homogeneous coating solution. The coating in the dry state has a density that is less than 0.9 times, and more preferably less than 0.75 times that of the nonporous coating material. The dry-state density of the coating can be calculated by dividing the coating weight (determined from the weight gain of the tablets before and after coating) by the coating volume (calculated by multiplying the coating thickness, as determined by optical or scanning electron microscopy, by the tablet surface area).

Thus it is clear that when the rejected claims are interpreted in light of the specification, they are clear and distinct to those skilled in the art. Withdrawal of the rejection is accordingly respectfully requested.

Claim 2 stands rejected under 35 USC § 102(b) as being anticipated by Dong et al., U.S. Patent No. 5,620,705. The Examiner reasoned that Dong disclosed a tablet containing sodium croscarmellose, hydroxypropylmethylcellulose (HPMC), mannitol and magnesium stearate. The Examiner pointed to example 7 of Dong et al, which discloses a displacement layer containing HPMC, sodium carboxymethylcellulose (CMC), and sodium chloride.

The rejection is traversed on the basis that the the standard for anticipation is one of strict identity, meaning that for prior art to anticipate, it must contain all of the essential elements. Hybritech Inc. v. Monoclonal Antibodies, Inc. 231 USPQ 81 (Fed Cir 1986). See In re Donohue, 226 USPQ 619 (Fed Cir 1985) where it was stated:

an anticipation rejection requires a showing that each limitation of a claim must be found in a single reference, practice, or device.

In the instant application, Claim 2 distinguishes over Dong et al. because claim 2 requires a water-swellaable composition (or "displacement layer", as stated by the Examiner) comprising a swelling agent and a tableting aid. The water-swellaable composition must have a swelling ratio of at least 3.5. Claim 2 distinguishes over Dong et al. because the

water-swellaable composition of Dong et al. does not have the required swelling ratio, and this is demonstrated by the Rule 132 Declaration of Scott B. McCray included herewith. The Declaration demonstrates, *inter alia*, that a water-swellaable composition was prepared using the same materials as the displacement layer of example 7 of Dong et al. McCray Declaration, ¶ 6. This water-swellaable composition formed by following example 7 of Dong et al. had an average swelling ratio of 2.4. McCray Declaration, ¶ 7. Example 9 of Dong et al. discloses a displacement layer using the same materials as in example 7.

Dong et al. also disclose PEO based water-swellaable compositions, but these also do not achieve the claimed swelling ratio. Example 10 of Dong et al. discloses a displacement layer using poly(alkyl oxide) of 3,000,000 to 7,500,000 molecular weight, as represented by poly(ethylene oxide). This displacement layer also would be predicted to have a low swelling ratio. Example 12 of the instant patent application tested a number of water-swellaable compositions, including PEO based water-swellaable compositions. Table 12 summarizes the results. None of the PEO based water-swellaable compositions had a swelling ratio of greater than 3.0. The water-swellaable composition containing 5,000,000 molecular weight PEO and sodium chloride (like that of Dong et al.) had a swelling ratio of 2.8 in water.

Thus, claim 2 clearly patentably distinguishes over Dong et al. because the water-swellaable composition (or displacement layer) of Dong et al. does not have a swelling ratio of at least 3.5.

Claims 7-9, 12-15, 17, 18, 22, 25-26, 44-45, 49-51, 56, 64-74, 79-81, 88-96, 101, 103-108, 118-122, and 124 are dependent from claim 2 and thus patentably distinguish over Dong et al. for the same reason.

Several of the dependent claims are further distinguishable over Dong, as discussed below. Although the additional features of these claims were not addressed in the Office Action, they should not be ignored. In re Boe et al., 184 USPQ 38 (CCPA 1974).

With respect to claims 7-9, the drug-containing composition does not include a drug-entraining agent. While HMPC is described as a drug-entraining agent in the application, it must have a sufficiently high molecular weight to form sufficiently viscous aqueous solutions. (Application at Page 17, lines 7-15). The molecular weight of the HMPC described in Dong is too low (9,200).

In particular, with respect to claim 9, none of the exemplified drug-containing compositions contains the drug-entraining agent polyethylene oxide.

With respect to claim 17, Dong does not disclose a solubilizer. The Examiner took the position that sodium chloride is a solubilizer. However, the sodium chloride of Dong is not in the drug-containing composition, but is instead in the water-swellaable composition

(displacement layer). In addition, it is not believed that sodium chloride acts to increase the solubility of a drug in aqueous solution. Examples of solubilizers are disclosed in the application at page 22, line 24 to page 25, line 5.

With respect to claim 22, Dong does not disclose a solubilizer in the water-swellaable composition. Dong discloses sodium chloride in the water-swellaable composition, but it acts as an osmotic agent, not a solubilizing agent for the drug.

With respect to claim 45, Dong discloses sodium carboxymethylcellulose in the water-swellaable composition, not sodium starch glycölate or sodium croscarmellose. (Sodium croscarmellose is cross-linked sodium carboxymethylcellulose).

With respect to claim 49, the swelling ratio of Dong is less than 5.

With respect to claim 50, the swelling ratio of Dong is less than 7.

With respect to claims 88-94, the coating of Dong is not formed with a non-solvent.

With respect to claims 118-122, the drug is not in the form of a solid amorphous dispersion.

The Examiner also rejected claim 2 under 35 USC § 103(a) as being unpatentable over Dong et al in view of Stella et al., U.S. Patent No. 5,874,418. The Examiner took the position that if Dong et al does not show the requisite core strength, then the claims are deemed to be obvious since Dong et al teach the claimed features and provide general guidance for making dosage forms. The Examiner further reasoned that Stella et al. disclose the motivation for using certain additives.

Claim 2 distinguishes over Dong et al in view of Stella et al for the same reason described above, namely that the swelling layer of Dong et al does not have the required swelling ratio. More fundamentally, claim 2 distinguishes over Dong et al in view of Stella et al because neither recognizes the problem solved by the claimed invention. The claim requires a combination of (1) a mass ratio of said drug-containing composition to said water-swellaable composition that has a value of at least 1.5; (2) the water-swellaable composition has a swelling ratio of at least 3.5; and (3) core has a strength following tableting of at least 3 Kp/cm². In order to have a high drug loading, it is necessary to use highly swelling materials in the water-swellaable composition. (Application at page 27, lines 26-31). However, the swelling agents that are preferred because of their highly swelling properties are difficult to compress to a hardness suitable for use in the dosage form. (Application at page 30, lines 31-33). The inventors solved this problem by adding a tableting aid to the water-swellaable composition to result in a material that compresses to a hardness suitable for use. (Application at page 30, line 33- page 31, line 1).


In this case, Dong et al. in view of Stella et al. does not disclose the invention as a whole, because Dong et al. in view of Stella et al. does not teach or suggest a water-swellaable composition having the combination of a high swelling ratio and high strength as

claimed. Neither Dong et al. nor Stella et al. recognize that highly swelling materials are needed in order to achieve the required swelling ratio, nor teach how to achieve such a swelling ratio. In addition, neither reference recognizes that when such materials are used, a tableting aid must be used in order to achieve the claimed core strength.

In view of the foregoing arguments and amendments, it is submitted that the application is neither anticipated by Dong nor obvious over the combination of Dong and Stella. It is thus respectfully submitted that the application is in condition for allowance. A Notice of Allowance is accordingly courteously solicited.

Respectfully submitted,

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Claim 1 has been canceled.

Claims 3, 4, 5, and 6 have been canceled.

8. (Once Amended) The dosage form of claim 2 [any one of claims 1-6] wherein said drug-entraining agent is selected from the group consisting of polyols, oligomers of polyethers, mixtures of polyfunctional organic acids, cationic materials, polyethylene oxide, hydroxyethyl cellulose, hydroxypropyl cellulose, hydroxypropylmethyl cellulose, methyl cellulose, carboxyethylcellulose, gelatin, and xanthan gum.

Claims 10 and 11 have been canceled.

13. (Once Amended) The dosage form of claim 2 [any one of claims 2-6] wherein said drug-containing composition further comprises a swelling agent.

17. (Once Amended) The dosage form of claim 2 [any one of claims 1-5] wherein said core includes a solubilizer.

20. (Once Amended) The dosage form of claim 2 [any one of claims 1-5] wherein said drug-containing composition further comprises a solubilizer.

22. (Once Amended) The dosage form of claim 2 [any one of claims 1-6] wherein said water-swellable composition includes a solubilizer.

26. (Once Amended) The dosage form of claim 2 [any one of claims 1-4 and 6] wherein said drug-containing composition further comprises a fluidizing agent.

Claims 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, and 43 have been canceled.

Claims 46, 47, and 48 have been canceled.

Claims 52, 53, 54 and 55 have been canceled.

58. (Once Amended) The dosage form of claim 2 [any one of claims 1-6]

wherein said low-solubility drug is selected from the group consisting of sildenafil and pharmaceutically acceptable salts of sildenafil.

58. (Once Amended) The dosage form of claim 2 [any one of claims 1-6] wherein said low-solubility drug is selected from the group consisting of sertraline and pharmaceutically acceptable salts of sertraline.

60. (Once Amended) The dosage form of claim 2 [any one of claims 1-6] wherein said low-solubility drug is the mesylate salt of the drug 4-[3-[4-(2-methylimidazol-1-yl)phenylthio]phenyl]-3,4,5,6-tetrahydro-2H-pyran-4-carboxamide hemifumarate.

60. (Once Amended) The dosage form of claim 2 [any one of claims 1-6] wherein said low solubility drug is 5-chloro-1H-indole-2-carboxylic acid[(1S)-benzyl-3-((3R, 4S)-dihydroxypyrrolidin-1-yl)-(2R)-hydroxy-3-oxopropyl)]amide.

61. (Once Amended) The dosage form of claim 2 [any one of claims 1-6] wherein said low solubility drug is 5-(2-(4-(3-benzisothiazolyl)-piperazinyl)ethyl)-6-chlorooxindole.

62. (Once Amended) The dosage form of claim 2 [any one of claims 1-6] wherein said low solubility drug is carprofen.

66. (Once Amended) The dosage form of claim 2 [any one of claims 1-6] wherein said drug has a maximum solubility of 20 mg/mL in aqueous solution that has a pH between 1 and 8.

67. (Once Amended) The dosage form of claim 2 [any one of claims 1-6] wherein said drug is a low-solubility drug.

68. (Once Amended) The dosage form of claim 2 [any one of claims 1-6] wherein said drug is substantially water insoluble.

66. (Once Amended) The dosage form of claim 2 [any one of claims 1-6] wherein said drug is sparingly water soluble.

68. (Once Amended) The dosage form of claim 2 [any one of claims 1, 2, 4, 5,

or 6] wherein said coating has a water flux (40/75) of at least 1.0×10^{-3} gm/cm²-hr.

70. (Once Amended) The dosage form of claim 2 [any one of claims 1-6] wherein said coating comprises a hydrophilic cellulosic polymer.

74. (Once Amended) The dosage form of claim 2 [any one of claims 1-6] wherein said coating is formed from a solution having a weight ratio of cellulose acetate to polyethylene glycol of from 9:1 to 6.5:3.5.

75. (Once Amended) The dosage form of claim 2 [any one of claims 1-6] wherein said coating is formed from a solution having a water concentration of greater than 4 wt%.

77. (Once Amended) The dosage form of claim 2 [any one of claims 1-6] wherein said coating is formed from a solution having a water concentration of greater than 15 wt%.

79. (Once Amended) The dosage form of claim 2 [any one of claims 1-6] wherein said coating includes at least a pore former.

Claims 82, 83, 84, 85, 86, and 87 have been canceled.

88. (Once Amended) The dosage form of claim 2 [any one of claims 1-3, and 5-6] wherein said coating is porous and is formed from a homogeneous solution comprising a solvent, a hydrophilic cellulosic polymer, and a non-solvent.

96. (Once Amended) The dosage form of claim 2 [any one of claims 1, 2, 3, 5, or 6] wherein said coating is porous with a dry-state density of less than 0.9 times that of the same coating material in nonporous form.

Claims 98, 99, and 100 have been canceled.

102. (Once Amended) The dosage form of claim 2 [any one of claims 1-6] wherein said coating has a mass of from 3 to 30 wt% of said core.

Claim 102 has been canceled.

103. (Once Amended) The dosage form of claim 2 [any one of claims 1-6] wherein, following introduction of said dosage form to a use environment, no more than 50 wt% of said drug is released to said use environment within 2 hours and at least 60 wt% to said use environment is released within 12 hours.

104. (Once Amended) The dosage form of claim 2 [any one of claims 1, 2, 3, 4, or 6] wherein, following introduction of said dosage form to a use environment, at least 60 wt% of said drug is released to said use environment within 12 hours.

105. (Once Amended) The dosage form of claim 2 [any one of claims 1, 2, 3, 4, or 6] wherein, following introduction of said dosage form to a use environment, at least about 70 wt% of said drug is released to said use environment within about 12 hours.

106. (Once Amended) The dosage form of claim 2 [any one of claims 1-6] wherein, following introduction of said dosage form to a use environment, at least 80 wt% of said drug is released to said use environment within 24 hours.

107. (Once Amended) The dosage form of claim 2 [any one of claims 1-6] wherein, following introduction of said dosage form to a use environment, at least 90 wt% of said drug is released to said use environment within 24 hours.

108. (Once Amended) The dosage form of claim 2 [any one of claims 1-6] wherein, following introduction of said dosage form to a use environment, at least 95 wt% of said drug is released to said use environment within 24 hours.

Claims 109, 110, 111, 112, 113, 114, 115, 116, and 117 have been canceled.

118. (Once Amended) The dosage form of claim 2 [any one of claims 1 to 6] wherein said low solubility drug is in the form of an amorphous dispersion.

Claim 123 has been canceled.

Claims 125, 126, 127, 128, and 129 have been canceled.

130. (Once Amended) The dosage form of claim 2 [any one of claims 1-6] wherein said drug-containing composition further includes a concentration-enhancing polymer.